

### Remarks

Claims 20-31, 35, 36, and 40-44 are currently pending and under consideration in this application. Applicant has amended claims 20 and 40-44. No new matter is added by virtue of the amendments contained herein. Support for the amendments lies in the claims and specification as filed. Applicants responds fully to each of Examiner's rejections as follows.

#### Indefiniteness

The Examiner rejected claim 42 under 35 USC § 112, second paragraph as being indefinite, for recitation of "1.0 about  $\mu\text{g}$ ". Claim 42 has been amended herewith to correct inadvertent typographical error in placement of the designation "1.0" in the phrase. Further, applicants have amended claims 40-42 to eliminate duplicate reference to the phrase "amount of." It is believed the present amendments render the rejection moot. Withdrawal of the rejection is respectfully requested.

#### Anticipation

The Examiner has rejected claims 20-31, 35-36, and 40-44 under § 102(e) as being anticipated by Williams (US 5,731,284) with evidence by Mayer et al. (US 5,352,683). Applicants respectfully traverse the rejection.

Williams teaches a method of administering GDNF in an amount effective to treat neural injury in Alzheimer's patients. There is no mention in Williams to use GDNF in any amount to treat pain. The only mention in Williams relating to pain is the background discussion of use of NGF, another neurotrophic factor, and a discussion of administration of NGF for treatment of neural injury in Alzheimer's patients as inducing adverse side effects of hyperalgesia and severe muscle pain.

Methods described in Williams teach administering GDNF to a subject suffering from degeneration or injury of basal forebrain cholinergic neurons, or administering GDNF to a subject suffering from Alzheimer's disease. There is no mention of selection or administration of GDNF to a subject suffering from degeneration or injury of dorsal root ganglia or trigeminal neurons, much less to a patient suffering from pain.

The Examiner maintains Mayer provides evidence of the inherent activity of the teaching of Williams because Mayer describes at column 1: "*Neuropathic pain is thought to be a consequence of damage to peripheral nerves or to regions of the central nervous system.*" Applicants respectfully disagree, and submit the disclosure of Mayer is merely a recognition of various possibilities of causes of neuropathic pain, and not evidence that the teaching of Williams would necessarily result in an inherent treatment of pain according to the presently claimed methods.

In order to be an effective anticipation, a single reference must disclose, either expressly or inherently, **each and every limitation** of a claim which the reference is purported to anticipate. *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir., 1992). Furthermore, under the principle of inherency, an anticipatory reference **must necessarily** function in accordance with, or include, the claims limitations it anticipates. *Id.* (quoting *MEHL/Biophile Int'l Corp. v. Milgram*, 192 F.3d 1362, 1365 (Fed. Cir., 1999)). Still further, "A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled." *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354, (Fed. Cir., 2003).

Applicants submit the teaching of Williams cannot serve as a proper anticipatory reference. The Examiner maintains that the teaching of Williams methods would inherently affect sodium channels, affect the dorsal root ganglia or trigeminal neurons, bind lectin, and alleviate pain. However, Applicants point out *whether* GDNF *may* inherently have such function *if* it were administered to a patient for treatment of pain is not a proper analysis for provision of an anticipatory reference. Such analysis requires, rather, the Williams reference teach administration of GDNF to a patient for treatment of pain, and such teaching directs one to make and use for treatment of pain according to Applicants' methods. Williams does not provide this teaching. Furthermore, Mayer does not provide any evidence that treatment of a patient for pain is a natural result flowing from the explicit disclosure of Williams.

The present situation is akin to that of *Perricone v. Medicis Pharmaceutical Corp.*, where Perricone claimed methods of using compounds previously disclosed as suitable for application to the skin for the use of treatment of skin sunburn. The Court found:

Claim 1 of the '693 patent, from which claims 2-4 and 7 ultimately depend, specifically recites application of the fatty acid ester to "skin sunburn." This claim term raises a different problem. The issue is not, as the dissent and district court imply, whether Pereira's lotion *if applied* to skin sunburn would inherently treat that damage, but whether Pereira discloses the application of its composition to skin sunburn. It does not. This court explained in *Catalina Marketing International, Inc. v. Cool Savings.com, Inc.* that a patent to an apparatus does not necessarily prevent a subsequent inventor from obtaining a patent on a new method of using the apparatus. 289 F.3d 801, 809 [62 USPQ2d 1781] (Fed. Cir. 2002). New uses of old products or processes are indeed patentable subject matter. *See* 35 U.S.C. §101 (2000) (identifying as patentable "any new and useful improvements" of a process, machine, manufacture, etc.); *In re King*, 801 F.2d 1324, 1326 [231 USPQ 136] (Fed. Cir. 1986) (principles of inherency do not prohibit a process patent for a new use of an old structure). That principle governs in this case as well.

Claim 1 of the '693 patent recites a new use of the composition disclosed by Pereira, i.e., the treatment of skin sunburn. The district court's inherent anticipation analysis for this claim contains a flaw. The disclosed use of Pereira's lotion, i.e., topical application, does not suggest application of Pereira's lotion to skin sunburn. In other words, the district court's inherency analysis goes astray because it assumes what Pereira neither disclosed nor rendered inherent. Because Pereira does not disclose topical

application to *skin sunburn*, this court reverses the district court's holding that Pereira anticipates claims 1-4 and 7 of the '693 patent.  
*Perricone v. Medicis Pharmaceutical Corp.* 77 USPQ2d 1321 (CA FC 2005).

Similarly, in the present rejection, the Examiner has assumed what has not been disclosed nor rendered inherent by Williams. The present claims recite "a method of treating pain in a human suffering from pain" by administration of GDNF "to a human suffering from pain" in an amount "effective to alleviate the pain in the human." Because Williams does not disclose treatment of pain in a human suffering from pain, Williams cannot anticipate.

The Examiner has rejected claims 20-31, 35-36, and 40-44 under § 102(e) as being anticipated by Lin et al. (WO 93/06116) with evidence by Mayer et al. (US 5,352,683). Applicants respectfully traverse the rejection.

Lin et al. teaches a method of administering GDNF in an amount effective to prevent damage to or prevent dopaminergic neural injury in Parkinson's patients. Methods described in Lin et al. teach only administering GDNF to a subject suffering from degeneration or injury of dopaminergic neurons, or administering GDNF to a subject suffering from Parkinson's disease. There is no mention of selection or administration of GDNF to a subject suffering from degeneration or injury of dorsal root ganglia or trigeminal neurons, much less to a patient suffering from pain.

The Examiner maintains Mayer provides evidence of the inherent activity of the teaching of Lin because Mayer describes at column 1: "*Neuropathic pain is thought to be a consequence of damage to peripheral nerves or to regions of the central nervous system.*" As discussed above, Applicants respectfully disagree, and submit the disclosure of Mayer is merely a recognition of various possibilities of causes of neuropathic pain, not evidence that the teaching of Williams would necessarily result in an inherent treatment of pain according to the presently claimed methods.

As discussed above, in order to be an effective anticipation, a single reference: 1) must disclose, either expressly or inherently, **each and every limitation** of a claim, 2) **must necessarily function** in accordance with, or include each of the claim limitations, and 3) must enable each of the claims it anticipates.

Applicants submit the teaching of Lin et al. cannot serve as a proper anticipatory reference. The Examiner maintains that the teaching of Lin et al. would inherently affect sodium channels, affect the dorsal root ganglia or trigeminal neurons, bind lectin, and alleviate pain. However, Applicants point out *whether* GDNF may inherently have such function *if* it were administered to a patient for treatment of pain is not a proper analysis for provision of an anticipatory reference. Such analysis requires, rather, the Lin et al. reference teach administration of GDNF to a patient for treatment of pain, and such teaching

directs one to make and use for treatment of pain according to Applicants' methods. Lin et al. does not provide this teaching. Furthermore, Mayer does not provide any evidence that treatment of a patient for pain is a natural result flowing from the explicit disclosure of Lin et al.

Similar to the discussion above, the present rejection over Lin et al. is akin to that of Perricone v. Medicis Pharmaceutical Corp., where Perricone claimed methods of using compounds previously disclosed as suitable for application to the skin for the use of treatment of skin sunburn. In the present rejection the Examiner has assumed what has not been disclosed nor rendered inherent by Lin et al.: The present claims recite "a method of treating pain in a human suffering from pain" by administration of GDNF "to a human suffering from pain" in an amount "effective to alleviate the pain in the human." Lin et al. does not disclose treatment of pain in a human suffering from pain. Thus, for the reasons discussed in the prior rejection, similarly here, Lin et al. cannot anticipate.

The Examiner has rejected claims 20-31, 35-36, and 40-44 under § 102(e) as being anticipated by Yan et al. (US 5,641,749) with evidence by Mayer et al. (US 5,352,683). Applicants respectfully traverse the rejection.

Yan et al. teach a method of administering GDNF in an amount effective to treat injury or degeneration of retinal ganglion cells. There is no mention in Yan et al. to use GDNF in any amount to treat pain. The only mention in Yan et al. relating to pain is the recitation that one form of glaucoma, angle closure glaucoma, wherein outflow of aqueous humor caused by a mechanical impairment induces an acute attack of glaucoma, is characterized by a red and painful eye. In fact, treatment of the primary cause of sudden increased pressure results in treatment of the red and pain symptoms; no nerve damage may occur if remedied in time, and no treatment according to the method of Yan et al. may be required.

Methods described in Yan et al. teach administering GDNF to a subject suffering from degeneration or injury of retinal ganglion neurons, or administering GDNF to a subject suffering from glaucoma. There is no mention of selection or administration of GDNF to a subject suffering from degeneration or injury of dorsal root ganglion or trigeminal neurons, much less to a patient suffering from pain.

The Examiner maintains Mayer provides evidence of the inherent activity of the teaching of Williams because Mayer describes at column 1: "*Neuropathic pain is thought to be a consequence of damage to peripheral nerves or to regions of the central nervous system.*" As discussed above, Applicants respectfully disagree, and submit the disclosure of Mayer is merely a recognition of various possibilities of causes of neuropathic pain, and not evidence that the teaching of Yan et al. would necessarily result in an inherent treatment of pain according to the presently claimed methods.

As discussed in the above rejections, in order to be an effective anticipation, a single reference: 1) must disclose, either expressly or inherently, each and every limitation of a claim 2) must necessarily function in accordance with, or include each of the claim limitations, and 3) must enable each of the claims it anticipates.

Applicants submit the teaching of Yan et al. cannot serve as a proper anticipatory reference. The Examiner maintains that the teaching of Yan et al. to treat retinal ganglion cell injury in a patient wherein some types of patients may suffer a form of glaucoma which may be characterized by a painful eye, and use of a dosage of 1 µg/kg/day GDNF is anticipatory. However, Applicants point out *whether* GDNF *may* inherently have such function *if* it were administered to a patient for treatment of pain is not a proper analysis for provision of an anticipatory reference. Such analysis requires, rather, the Yan et al. reference teach administration of GDNF to a patient for treatment of pain, and such teaching directs one to make and use for treatment of pain according to Applicants' methods. Yan et al. does not provide this teaching. (Applicants again point out the type of glaucoma referenced in Yan et al. as painful would be treated for the primary cause to release the presence of increased aqueous humor, thereby reducing pressure redness and pain. Such physical treatments are taught as an advance treatment entirely unrelated to the methods of use of GDNF as taught by Yan et al.) Furthermore, Mayer does not provide any evidence that treatment of a patient for pain is a natural necessary result flowing from the explicit disclosure of Yan et al.

Similar to the discussions above, the present rejection over Yan et al. is also akin to that of *Perricone v. Medicis Pharmaceutical Corp.*, where Perricone claimed methods of using compounds previously disclosed as suitable for application to the skin for the use of treatment of skin sunburn. The present claims recite "a method of treating pain in a human suffering from pain" by administration of GDNF "to a human suffering from pain" in an amount "effective to alleviate the pain in the human." Here the Examiner has assumed what has not been disclosed nor rendered inherent by Yan et al. Yan et al. does not disclose treatment of pain in a human suffering from pain. Thus, for the reasons discussed in the prior rejections, similarly here, Yan et al. cannot anticipate.

For the reasons discussed above, none of Williams, Li et al., or Yan et al. disclose, either expressly or inherently, each and every limitation of Applicants claimed methods to treat a human suffering from pain. Furthermore, none of Williams, Li et al., or Yan et al. necessarily function in accordance with, or include, Applicants claimed methods. Finally, none of Williams, Li et al., or Yan et al., provide any disclosure, much less an enabled disclosure to carry out Applicants claimed methods. As

such, Williams, Li et al., and/or Yan et al. cannot serve as anticipatory references. Withdrawal of the rejections under 102(e) is thus requested.

In summary, Applicant respectfully submits that the rejections for indefiniteness and anticipation should be withdrawn, and the present case is in condition for allowance. Should the Examiner maintain that some of the issues addressed herein remain unresolved, the undersigned would appreciate the opportunity to discuss such issues at the Examiner's convenience and hereby requests an Examiner interview by telephone for this purpose.

A petition for a three (3) month extension of time and American Express credit card form to cover the fee for an extension of time are enclosed. It is believed no additional fees are due in association with filing of these papers, however, in the event any additional fees are due, please charge any additional fees associated with this filing, or apply any credits, to our Deposit Account No. 03-1721.

Respectfully submitted,

  
Kerri Pollard Schray  
Reg. No.: 47,066

Date: September 7, 2006  
Choate, Hall & Stewart, LLP  
Two International Place  
Boston, MA 02110  
Phone: (617) 248-5000  
Fax: (617) 248-4000